THE

BOSTON MEDICAL AND SURGICAL JOURNAL.

Vol. LXXVI. Thursday, July 11, 1867. No. 23.

THE RELATION TO GENERAL MEDICINE OF THE DISCOVERIES AND ADVANCES OF OPHTHALMOLOGY DURING THE LAST DECADE.

Messrs. Editors,—The following remarks of Prof. August Rothmund, of Munich, show so clearly the relation to general medicine of the discoveries and advances of ophthalmology during the last decade, that for the benefit of your readers I have translated them from the *Vienna Weekly Medical Journal* for Feb. 26, 1867.

Respectfully yours, B. Joy Jeffries.

When any great and remarkable discovery has been made in some one department of natural science, history shows that it has always had a permanent and reforming effect upon the allied branches. And we find, also, in medicine, that when particular parts of the science are at times cultivated, a favorable impulse is given to the others. In the following *résumé* I shall endeavor to show how the recent advances in ophthalmology may be turned to account in general medicine, and looking for this purpose at the separate parts of the eye, it will be readily seen that the very latest discoveries deserve from general medicine the fullest consideration.

Let us commence with the retina and optic nerve. A true knowledge of the diseases of these organs dates back to the invention of the ophthalmoscope, as it is only by the help of this instrument that the retina and optic papilla can be seen in the living human being. We may regard the retina as an outpost of the brain, a portion projected to the surface, completely open to observation. We can, moreover, see the entrance of the optic nerve, the only one of the nerves of sense exposed to view in the living organism. It naturally, therefore, occurred to the observer, soon after the invention of the ophthalmoscope, that certain central affections would cause material alterations in the optic nerve and retina, and allow us to deduce from them the nature of the cerebral affection. At the very first, attention was called to the whitish, tendon-like color of the optic papilla following cerebral amaurosis; soon, also, it was seen that encephalitis and meningitis, especially the basilar forms, could be readily connected with neuro-retinitis, in which the nerve is swollen and the retina often hyperæmic, infiltrated and cloudy. It is, however, cerebral and orbital tumors which especially produce, by pressure on the optic nerve, changes in its histological condition. In such cases, the ophthalmoscopic appearances are, the so-called mechanical hyperæmiæ of the papilla (tortuous, swollen veins, prominence and grayish discoloration of the papilla, often associated also with hæmorrhagic collections in the retina). In the *meningitis cerebro-medullaris* which lately visited some parts of Bavaria, a blindness not unfrequently occurred, in which the ophthalmoscope showed neuro-retinitis and diffuse retinitis, with sometimes plastic, sometimes purulent exudation, often connected with paralysis or with subsequent irido-choroiditis.

Important as are these objective conditions in cerebral diseases, the subjective appearances in the eye deserve equal attention, and among these especially the manner in which the field of vision is contracted in commencing blindness. Since attention has been carefully directed to this latter, namely, in commencing amblyopia, and not only the acuteness of vision but the perceptive power of the peripheral parts of the retina been noted, we have very greatly advanced in the precise diagnosis and prognosis, and also arrived at a rational starting point in the treatment of these diseases. To mention a striking example, it has long been known that many affections of the brain are associated with hemiopia; we know also that the optic nerve fibres cross at the chiasma, and although there is still much dispute in reference to the method and manner of the decussation, and the course of the separate fibres is not yet fully known, yet it is quite clear that the right optic tract sends one portion of its fibres to the *right*, and a considerable also to the *left* eye. It is likewise true that the fibres from the *right* track going to the *right* eye run principally on the outer side of the right optic nerve, and those which go to the left eye are on the inner side of the optic nerve. There is an analogous condition of the fibres from the left optic tract, i. e., the right optic tract supplies the right half of both eyes, whilst the left is supplied by the left optic tract. From this anatomical relation, it may be readily clinically deduced that in those forms in which the external field of vision on both sides is defective, and correspondingly the two *internal* halves of the retinæ not sensitive, the difficulty, whether a tumor, exudation or extravasation, must lie in front of the chiasma; moreover, that in hemiopia, when the right or left halves of the retinæ are incapable of transmitting impressions, the corresponding right or left optic tract being affected, the difficulty must be behind the chiasma.

In Bright's disease, the changes in the retina deserve attention. Landouzy, Frerichs and others had long ago noticed the marked trouble of vision in this disease. But these early observers attributed it to imbibition of urine, whilst the invention of the ophthalmoscope has proved material changes in the retina so characteristic of the affection, that cases not unfrequently occur in which the trouble in the kidneys is dignosticated solely by these alterations. The ophthalmoscope shows us white or dirty white opacity of the retina, first around the optic papilla. The peripheral edge of this opacity appears in many cases irregular, jagged, terminating in small white detached spots. The vessels are gradually surrounded by this white exudation, so that only portions of them are visible. The nerve generally appears swollen and projecting. Groups of white points are seen in the region of the macula lutea connected together by prolongations. Besides these we have larger or smaller retinal ecchymoses. We may therefore consider the disease a retinitis apoplectica recurrent and insidious, causing change of tissue in the parts affected. Subjectively the patients complain of weak and clouded vision, the field exhibiting interruptions rather than contraction. Although there is no doubt of the connection between the shrinking of the kidneys and the retinitis, yet each affection is somewhat independent of the other, in that the retinal changes and accompanying difficulty of vision may partly or wholly disappear, whilst the trouble with the kidneys progresses. Although amblyopia accompanying morbus Brightii is generally dependent upon retinal difficulty, yet cases occur where the dimness is due to uræmic imbibition. Retinal trouble comes not only with diffuse nephritis, but also with amyloid degeneration, as Traube and Beckmann have shown; in the majority of the cases, also, disease of the heart may be found, namely hypertrophy of the right ventricle.

The so-called *retinitis pigmentosa*, characterized by deposit of black pigment in the retina, causing slowly progressive contraction of the visual field, and with appearances of hemeralopia leading nearly always to blindness between the 40th and 50th year, deserves here our attention, since Liebreich has shown that the disease especially affects children of parents who are blood relations (40–50 per cent.). I noticed long ago that this affection was seen almost exclusively among the Jews, which is now readily explainable by the frequent marriage among them of blood relations. Irregularities in the retinal vessels are found moreover in disease of the heart, in anæmia and leukæmia; and whilst in the former the veins especially are dilated and varicose, in anæmia and leukæmia there is such a lack of blood as to produce dimness of vision. I reported a case a few years ago, where sudden blindness having been caused by anæmia, I succeeded in restoring sight by paracentesis of the globe. A. von Graefe, Jun. obtained the same result in a similar case by iridectomy. —Apoplexies of the retina are not uncommon, either spontaneous or traumatic, or finally accompanying inflammations. Although absorption takes place rapidly and vision quickly returns after the sudden blindness, yet the prognosis of apoplexies is very grave, as they are only too often the forerunners of subsequent *cerebral* apoplexy. I can recall several people who had consulted me for scotoma in the visual field or sudden partial or complete blindness, and shortly afterwards died of apoplexy; retinal apoplexies, therefore, deserve our fullest consideration. Embolus of the main trunk or a branch of the central artery and consequent complete blindness or contraction of the field of vision has been often noticed, and in rare cases the gradual disappearance of the plug very perfectly observed with the ophthalmoscope.

In secondary syphilis, also, we find affections of the retina, and if the appearances in this retinitis are not perfectly characteristic of syphilis, yet the opthalmoscope shows with certainty that the retina may be affected in secondary syphilis without the choroid participating. The prognosis in such cases is quite favorable, and I have generally seen in the majority of cases a complete restoration of vision in from six to eight weeks under an antisyphilitic treatment. Zehender says correctly: "Idiopathic affections, especially inflammations of the retina, are very rare. The large majority of all retinal diseases are rather due to interruptions to the general health, namely, irregularities in the circulating system, heart or kidney troubles, syphilis, &c., or they occur from local changes or injuries in the choroid or vitreous. Whilst modern ophthalmology in opposition to the old school has sought to group the forms of the diseases of the eye in accordance with their anatomico-pathological appearances, and do away with names drawn from the dyscrasiæ which were their presumptive cause, we return, especially in retinal diseases, back again to the school of dyscratic ophthalmic diseases. Experience with the ophthalmoscope has convinced us, and each day more clearly, that certain retinal affections dependent upon general disease may appear so characteristic that the latter can be safely diagnosticated by ophthalmoscopic examination. Such experiences, where the ophthalmoscopic result gives almost positive symptoms of the general affection, lead naturally to a nomenclature which cannot neglect the close connection between the local ophthalmic disease and the general malady." There are, nevertheless, cases of blindness in which the objective appearances on the brain and in the optic nerve are negative, and we are reduced to very doubtful etiological data. I would recall here amaurosis from the abuse of tobacco (nicotine amaurosis), lead disease, after the use of quinine, in disturbed menstruation, hæmorrhages of the stomach, suppressed habitual hæmorrhages and other excretions. It is interesting to notice, also, that cerebral amaurosis is much more frequently observed in men than women.

As to the choroid, the majority of its affections are not associated with derangement of the general system, and are therefore to be omitted from our résumé. That the choroid is frequently affected in syphilis has been long known, not, however, that it participated in every inflammation of the iris. A peculiar form of choroiditis, known under the name of disseminate, is regarded by many as a positive sign of secondary syphilis, which I however much doubt, as I have had several cases in individuals where no thought of syphilis could be entertained, and who showed no other symptoms of the disease. *Tubercular* infiltration of the choroid has been mentioned by Manz and Jäger. The tubercles appear as grayish white round bodies, of the size of a linseed to that of the diameter of the papilla and over, sharply cut against the fundus, and appearing in large groups; they are always observed in connection with general miliary tubercle, and where, therefore, the diagnosis lies between typhus and miliary tubercle, this fact may be of importance to the pathologist.

In this connection, I would make a few remarks with regard to the *relation of glaucoma to arthritis.* It is a recognized fact that glaucoma occurs principally in arthritic persons; the older authors, therefore, in time of the general crases school, called it choroiditis arthritica. Modern times have shown glaucoma to be an extended inflammation of all the internal organs of the eye, dependent upon venous hyperæmia, coming on with marked increase of intraocular pressure, leading to excavation of the optic papilla, and showing a great tendency to degenerative atrophy of the parts within the globe. This view that glaucoma is principally due to increase of intraocular pressure has led, as we know, to the remedy for this heretofore incurable disease; for by iridectomy we can, as von Graefe has proved, lessen the pressure. Although we have regarded glaucoma as a local process, the local treatment employed being most completely triumphant, yet it remains nevertheless very noticeable that the arthritic person is especially attacked, and it seems probable that some peculiar relation must exist here. I think that the cause is the condition of the sclerotic; all fibrous membranes are, in arthritic people, by deposit, rendered more firm, harder, inelastic, and thus in such an inelastic sclera the slightest choroidal congestion increases the pressure within the eye; whilst in a more yielding membrane a transient congestion is equalized by stretching. A proof of this may be that in young persons with elastic sclerotics glaucoma does not occur; moreover, in myopes, where, as we know, the sclera is thin and bulges posteriorly, and is therefore more yielding, glaucoma is much more seldom observed than with emmetropes and hypermetropes.

Another disease has been described under the name of choroiditis *pyæmica.* Namely, cases of purulent ophthalmiæ in the course of purulent fevers; for example, in puerperal women with childbed fever, formerly called metastasis of milk. This disease begins most generally with a choroiditis and rapid deposit of exudation in the vitreous, quickly followed by panophthalmitis, and ending, if death does not sooner occur, in an atrophy of the globe. To these remarks on affections of the choroid I may add, that all inflammations of this membrane are much more dangerous than those of the retina; the reason being that the retina is readily loosened by exudations, or at least the basilar layer adjacent to the choroid is altered, whilst retinal exudations, even when considerable, protrude into the vitreous, and may then become absorbed without further damage.

In choroidal diseases we saw that certain processes are not only to be referred to so-called dyscrasiæ, but that mechanical alterations had also great influence upon them; now in reference to inflammations of the iris this is still more marked. It is well known that these frequently occur in patients with syphilis, and more especially the pustular form. Yet with this disease the iritis is not so characteristic that we can determine from it alone the dyscrasia in question. It is certain that there is scarcely a disease which relapses so readily and so frequently as this, and the old practitioners are right, therefore, in referring the cause of the repeated iritis to the continuance of the syphilitic affection. Yet for the majority of cases this is not quite true, since we know that in iritis the exudation primarily and principally affects the edge of the pupil, producing therefore very readily adhesions between the anterior capsule and the iris at its pupillary margin, so-called synechiæ. As now the iris consists of movable muscles, such attachments must cause constant stretching, producing irritation, inflammation, new adhesions, and so closure or obliteration of the pupil. Proof that this purely mechanical condition, and not the present dyscrasia, causes such inflammations is, that an iritis once having caused adhesion readily recurs, the oftener and the quicker, the broader and more mumerous these adhesions. Moreover, inflammations of the iris which do not leave synechia rarely relapse; finally, when we, by freeing these connections by operation (iridolysis), or cutting out a piece of the iris (iridectomy), prevent the injurious stretching, further relapses do not occur. Hence the primary therapeutical indication in iritis is frequent use of atropine drops, either to prevent, if possible, the synechia, or if it has occurred, to loosen it by treatment or operation.

Careful observation of the transparent media of the eye, the cornea, lens and vitreous humor, gives us important data in reference to diseases of the general system. First of all in the *cornea*, inflammation is not alone dependent upon the presence of the vessels, and hence keratitis is worthy of special study. By the name of neuroparalytic keratitis, is understood a suppurative inflammation of the cornea occurring after section of the trigeminus nerve in animals. Similar suppuration of the cornea has been seen in man in cerebral disease, principally intra-cranial tumors. The symptoms are, rapid clouding of the cornea, sudden deep necrotic ulceration, causing its complete destruction. Hence it has been supposed that the fifth nerve stood in direct relation with the nutrition of the cornea. Later experiments by Snellen and Donders have given another interpretation. According to them, the destruction of the cornea depends upon its insensibility after section of the trigeminus, so that no external foreign bodies, as dust and hairs, &c., are felt and therefore lie upon it; moreover, accidental blows, scratches, &c., are not perceived. From this irritation the inflammation of the cornea proceeds. If, after section of the fifth nerve in an animal, we sew the lids together and thus protect the cornea, this destruction takes place very slowly. blows of course not being prevented; sewing the long ear of the rabbit, supplied by other sensitive nerves, over the eye after section of the trigeminus, will, according to the above authors, entirely prevent the destruction.

Winther, who has made extended experiments in this direction, says, 1st. Sewing a protection of muscle or skin over an eye whose trigeminus has been cut, prevents inflammation and opacity so long as it remains. 2d. After loosening or removing the cover, the inflammatory symptoms appear; more slowly and milder the longer the time after section of the trigeminus. According to Winther, these two facts, that after section of the trigeminus (1) inflammation of the eye always occurs upon exposure to the air; (2) inflammation never occurs when the eye is protected, seem adapted to throw some light on affections resulting from cold, and will be perhaps points of departure in experimentation upon what is called the rheumatic diathesis. Cases of this keratomalacia have been seen in epidemic cerebro-spinal meningitis. Niemeyer records several cases in which a keratitis commenced with injection and muco-purulent conjunctival secretion from the eye, leading in a few days to keratomalacia and hypopion, and refers it to a purulent basilar meningitis extending to the neurilemma. Schirmer, on the other hand, explains this circumstance by the traumatic injury to the cornea from insufficient closure of the lid, the patients in their comatose condition not closing the eye completely, so that dust and other foreign bodies can enter the palpebral aperture unhindered. We may in the same way explain ulceration of the cornea in typhus, tuberculosis and meningitis, without having to assume an injury to the 5th nerve. Whether the corneal disease which is comparatively frequently associated with the exophthalmos in the severer degrees of Basedow's disease, is due to the lack of protection and moisture, is still doubtful. Yet the course of the affection, as Græfe has observed, resembles the keratitis after section of the trigeminus, assisted perhaps by the stretching of the ciliary nerves from the rapid displacement of the point about which the eye turns, or compression of the nerves by distended vessels, or hypertrophy of the adipose cellular tissue. The favorable result from enlarging the palpebral aperture in this disease seems to support this view.

The causes in general of the frequent *opacities of the lens* have not yet been discovered, as we have no dyscratic influences to refer cataracts to, or local influences, except direct injury, and over-exertion of the eyes; von Walther's proposed theory of inflammation also meets with no general acceptance, although since, lately, Virchow has taught that inflammation may occur in a nonvascular organ or one which derives its support from a distance, Donders has observed some very acute anomalies of nutrition in the lens. It can only be safely said that opacity of the lens occurs frequently after long continued choroidal disease; I would simply mention here the frequent occurrence of posterior polar cataract in staphyloma posticum or excessive degrees of myopia. A remarkable fact is the relative frequency of cataract in diabetes, and also the appearance of cataracta zonularis, so called lamellar cataract, in children with rachitic dental structure, hydrocephalic heads, or those who have had frequent convulsions. Arthritis does not seem to stand in any direct relation to cataract. Since we have been able to recognize a commencing cataract with the ophthalmoscope, all reports of curing cataract by internal remedies, such as mercury, iodine, antimony, &c., have gradually disappeared from literature. That the lens becomes harder with increasing age and therefore the near point of the eye recedes, is a fact long known; not so, however, that this, in the normal eye, is so progressive a process that from the number of the glass used for near work the age of the individual can be determined, as has been shown by Donders.

With the same right as with the lens, we may speak of an inflammation of the *vitreous*, a hyalitis; this is, however, connected with inflammation of the retina and optic papilla. The exudations are sometimes purulent, sometimes of fibrous character, and often so excessive as to displace a greater part of the vitreous. Cysticerci in the vitreous excite our special attention here. It would seem as if they came in to the vitreous after perforating the retina, and their origin was in the latter or the choroid. Since we know from Siebold, Küchenmeister and Leuckart, that the general cause of the presence of chains of tapeworm and cysticerci, is the use of raw flesh, we can understand why these parasites are so commonly observed in North Germany, whilst they are but rarely met with in South Germany.

The *conjunctiva* affords us much worthy of observation in reference to affections of the general system, since the crasis theory has been dropped and the affections of this membrane have been classed according to the laws of inflammatory products. With the exception of trachoma, an affection peculiar to the mucous membrane of the eye, we find in the conjunctiva the ordinary processes of mucous membranes, such as catarrh, blennorrhagia, diphtheria and herpes in the so-called syndesmitis phlyctænulosa; and this division is of great value, since in each of these inflammations different remedies are known to be beneficial. For instance, the caustics almost abort blennorrhœa of new-born infants, whilst in diphtheria they only do harm, and I cannot understand how they are useful in diphtheria of other organs, for instance the fauces and larynx. Military ophthalmia is now generally conceded not to be a specific disease, but partly a catarrh, partly a blennorrhœa, generally though a trachoma, and caused in the majority of cases by the over-filling of badly ventilated localities.

The diseases of the *muscles* of the eye have special interest for the neuropathologist, for commencing cerebro-spinal trouble very often first makes itself known by difficulty in the ocular muscles, and double vision is often the first symptom of the disease. Complete oculomotorius paralysis we may refer to a cerebral cause, whilst partial paralysis very rarely can be done so. I may recall in this connection the crossed double images of drunken persons, and the divergence of the optic axes in chloroform sleep. We know that very various affections of the brain may produce such paralysis of the oculomotorius, but syphilis seems to be a very frequent cause. According to von Graefe's observation paralysis of accommodation with mydriasis is sometimes the forerunner of mental affections, especially when the former is transient, frequently recurring and affecting the two eyes alternately. The so-called diphtheritic paralysis is still more interesting here, occurring often after diphtheria of the fauces and causing especially paralysis of accommodation, occasionally combined with paralysis of the soft palate and œsophagus. This paralysis comes on always a few weeks after the cure of the local diphtheritic affection. Very little is known in regard to the nature and causes of this paralysis, as Nagel says, we do not even know whether they are central or peripheral. On the one hand it is thought that the alteration in the mixture of the blood associated with the general disease, causes morbid processes in the central organs of the nervous system; on the other hand many cases of unilateral paralysis with unilateral throat affection speak for a local extension of the trouble from the periphery; finally, Zenker, who has seen the same degeneration of the muscles in typhus and in diphtheria, attributes a myopathic origin to diphtheritic paralysis. Müller's hypothesis seems to be little supported, namely that the frequent paralytic ocular affections are due to the extension of the morbid process from the palatine nerves, through the nervous filament running from the spheno-palatine to the ciliary ganglion, which filament Hyrtl considers fibrous. As we know, the course of diphtheritic paralysis of accommodation or of the muscles of the eye is favorable, and followed in a few weeks by complete restoration. (Nagel.)

We have thus reviewed all the separate parts of the eye, and seen how each is associated with affections of the general organism.

A REMARKABLE CASE OF TOXHÆMIA STRIKINGLY SUGGESTIVE OF GLANDERS.

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[Communicated for the Boston Medical and Surgical Journal.]

Under this caption, I propose to report a unique case of blood-poisoning, which I think is well worthy of a place in your Journal. Its origin was so obscure, the peculiar manner of introduction of the disorganizing agent so mysterious, as were also its accompanying phenomena, that I prefer to give a simple detail of its prodroma and cropping out, and allow my professional brethren to form their own deductions and assign it its proper place in the pathological table. I am not one of those who believe in the generation of new diseases, nor am I willing to admit even a "change of type" in the old. In many cases that are veiled in doubt and obscurity, the *modifying influence* may be discoverable in the previous history of the patient. As to acute febrile disorder, whatever be the morbific agent, when it varies much in the expression of its peculiar phenomena, we are at a loss for information fixing its specialty. This in large measure is attributable to our want of more definite knowledge of the condition of the blood and of the secretions which attends these acute disorders. Unquestionably the field of research lies in the fluids of the body, and our hope of advance will never be realized till the handmaids of medicine, microscopy and chemistry, come to our relief.

In the present state of our knowledge we are compelled to wait for days to elapse before we can say this is a case of syphilis, of smallpox, of typhoid fever. Shall we always labor under these disadvantages? always be compelled to wait for the cropping out? wait for expressive blossoms? wait till the fermentative process has impressed the zymotic action on every blood-cell, fibre and constituent of the body? This is not the worst of it; if the cropping out is tardy or irregular, our perplexity increases, and we feel more than ever chagrin over our ignorance and incapacity. Unquestionably the finer part of medicine has yet to be learned.

If the subjoined case was one of pyæmia, then I must confess that there were certain irregularities in its manifestations that I had never seen before. If it were one of transmitted glanders, its prodroma were most unusual and significant.

On April 30, 1867, I was called to see Robert F., aged 20, clerk. Complained of severe pain in the calves of his legs. Had taken a walk several days previously of five or six miles, and had felt badly ever since. His pulse was nearly natural; skin comfortable; secretions all well performed. The parts were very painful on pressure, but were not discolored or much swollen. I believed it to be a case of simple myositis from over-exercise, and ordered rest and Dover's powder, with quinine three times a day.

The next day he pronounced himself better, though his legs were still sore and painful, and he was unable to walk upon them. After limping about the house on crutches for four or five days, he got worse, and sent for me again. His calves were now hot and tender, and appeared more swollen than when last seen, though there was no erysipelatous blush of the skin. The left was more painful than the right. His pulse was soft, and beating 90 to the minute; tongue a little furred, and his appetite not so good as it had been; no motion from the bowels for two days; skin and kidneys secreting very well. Gave saline purgative and applied wet cups to his legs; when removed, to have them swathed in hot flannel saturated with Fleming's tinct. rad. aconiti. To have half a grain of opium and two grains of quinine every four hours. Milk diet.

May 10th.—Rested well last night, and the pain in his calves much relieved. Complains this morning of *soreness* all over him, particularly in his forearms and hands, the backs of which are puffed, and there is an erysipelatous blush along the middle metacarpal bones, with tenderness on pressure, as if their periosteum was involved. Pressure upon all the long bones gave him pain. Pulse 110, and a little sharp; skin dry; tongue furred; complained of headache and of general distress. The case, as it now stood, was exceedingly obscure—none could be more so. Ordered antimonial saline mixture to relax his skin and establish the secretions. Milk diet.

11th.—Did not rest well last night, though he had taken a large Dover's powder, with morphine. Skin very hot and dry; tongue dry and brown in the middle; pulse 130, very full and hard; hands and forearms very much swelled; the erysipelatous blush had extended over the hands, and the left elbow was red, swollen and painful; the bridge of the nose was red. On looking at his feet they were found discolored above and a little puffed. Abdomen tympanitic. No motion from his bowels. Urine *copious* and high colored. I now became alarmed for the safety of my patient. It was quite evident some powerful irritant was introduced into the circulation, but what is was puzzled me in the extreme. Thinking over the blood poisons, I began to suspect pyæmia, but where was the nidus? I again re-examined his calves, but could find nothing suspicious in their appearance. I thought they seemed a little full, but the man had a fleshy leg. I *thoroughly* examined them, and was still in doubt. I thought one of them a little too pendulous, and believed I had discovered *fluctuation.*

I took another physician to see him, but he could discover nothing to throw light upon the case. I made an exploratory puncture into the more suspicious looking calf at its most pendulous portion, but after burying the point of the instrument upwards of an inch nothing but thin blood flowed out of the wound. I now carried it down nearly its whole length, when it suddenly jumped into a cavity. Dark-looking blood and pus welled up through the opening. Making a free incision, large firm black coagula, swimming in a dark fluid formed of disorganized blood and ill-looking pus were extruded. Quite a quantity was discharged. The left calf was treated the same way with the like result, though the collection did not lie so deeply, nor was the quantity so large as in the right leg. The case, then, was one of pyæmia, which had its foci at the hæmorrhagic points, but whether the immediate result of local phlebitis or dependent upon absorption of a peculiar irritant generated at those points could not be told. But *after* the bad collections had been evacuated the constitutional irritation did not subside; however, this does not settle the point at issue, since it has been fully demonstrated by cases of accidental *inoculation*, that pyæmic irritation does not depend upon the *quantity*, but rather the *quality* of the absorbed poison; and moreover, has the same power of propagation or reproduction, as has smallpox or any other of the zymotic poisons; else how could be explained those fatal cases of inoculation which every now and then occur? As to its transmissibility, pyæmia producing pyæmia, I cannot speak, as I do not know that there are any cases on record.

A calomel purge was given him, and as he complained of so much pain the opium was increased as soon as he had an evacuation. He took pulv. opii gr. i., quin. sulph. grs. iss., made into pill; one every two hours. Iced lemonade and iced milk were given freely. He had no nausea, and ate whatever was given him. He was very anxious to have something left for him to make him sleep at night. To-day he was quite nervous and had an anxious look.

12th.—Slept better last night, but his general condition not improved: pulse 135; not hard as it was yesterday; had many stools, light colored, thin, not offensive. The left side of his nose and left upper eyelid were very much swollen; his head did not hurt him much. His joints were closely inspected, but with the exception of his left elbow, none of the larger joints were affected. This was swollen and painful. His hands and forearms were very much swollen, and an erysipelatous blush had spread over the dorsum of his feet, which were a little œdematous. On the right arm midway of its external aspect, a considerable quantity of matter had collected: a similar abscess was also found over the right fibula, and one at the lower part of the left calf near the fibrous expansion of the tendo-Achillis. Same treatment continued.

13th.—Patient disposed to wander; nose much swelled and left eye closed; a blush of inflammation extended down the right side of the nose. Numerous *pustules* had made their appearance over the chest, and a collection of matter was felt near the nipple: at numerous other points small abscesses could be felt. No irruption had occurred in the large joints, which were again carefully examined. Had many evacuations from the bowels, which were of typhoid character, and very offensive. General condition of the patient pretty much as yesterday. Treatment continued.

14th.—Always dozes after taking a pill, but wanders more than he did, and is constantly moving his hands about. His right eye is now closed and he can see no one, yet recognizes familiar voices, and speaks intelligently when addressed by name. A thin straw-colored secretion is running from his right nostril; his whole body is dotted with pustules, and several very large ones are to be seen about his neck. His nose is enormously swollen, and several erosions of the skin (which is very purple), have taken place on its left side, permitting a view of the thick cheesy matter that distends the whole substance. There is some difficulty in swallowing, the fauces appearing to be involved. Pulse 135, and not so strong as yesterday; it is losing power; bowels very loose and discharges fœtid; skin gently moist; tongue furred and nervous. Urine liberal in quantity, high colored. He is very nervous and desires frequently to change his position.

15th.—He can scarcely swallow; the sides of his neck are swollen; his face is miserably disfigured by the swelling of his nose and eyes, which is increased by dark incrustations upon his upper lip from the secretions from his nose.

His pulse is quite feeble, and dark bullæ have made their appearance among the pustules: his bowels are still loose and the discharges fetid. Some of the abscesses have disappeared from under the integument, but others have made their appearance at different points. The tops of some of the pustules have been rubbed off, leaving hard red bases. On the morning of the 17th, two days after, the man died. Died of what?

May I be excused for expressing a doubt, and suggesting that the closing scenes of this case more closely resemble those of glanders than they do of pyæmia. I am inclined to this opinion upon this ground: that whilst there are no pathognomonic symptoms of pyæmia, yet there is a series of occurrences or events, which attend the pyæmic condition; and however variable this class of cases may be, yet one or more of these symptoms will generally be present, viz.: rigors, profuse sweats, an icterode appearance of the skin, rapid emaciation, rapid respiration. I have never seen a case of pyæmia in which all of these symptoms were absent. Now for the negative evidence: I have never seen a case of pyæmia that cropped out in pustules and affected the nasal cavities and the substance of the organ as in this case.

But there is a disease that does so affect the skin and the nose; it is glanders. Yet if we go into an analysis of this case, we shall not find those rigors, those *hideous, fœtid sweats,* the *ulcers,* the *gangrenous spots* and *hard tubercles* so particularly described by those who have observed the ravages of the disease in the human subject, and on which so much stress is laid, particularly the "hideous, fœtid sweats."

If the case was one of glanders, the patient did not acquire the disease by inoculation (for I was careful in ascertaining that fact), but must have *inhaled* the poison. When? Where? There are glandered horses in the town, and have been ever since their introduction by the United States cavalry during the war;—it seems impossible to get rid of them. Abandoned horses, broken down by hard usage and disease, having a chronic running from one nostril, which nearly dries up at times and encourages hope of recovery, then suddenly relapses; these horses, mostly owned by negroes and undoubtedly affected with chronic glanders, are at this time of year running at large over the common and public roads. It is just possible that he acquired the disease from one of these animals. If he was so affected, its approaches or early manifestations were very insidious and obscure. Undoubtedly he had a hæmorrhage in the calves of his legs, which, after a week of local distress and inflammation, was followed by constitutional symptoms and blood-poisoning—this sounds very much like the story of pyæmia.

Reports of Medical Societies.

VERMONT MEDICAL SOCIETY—SEMI-ANNUAL SESSION. REPORTED BY L. C. BUTLER, M.D., SECRETARY.

The Vermont Medical Society held its semi-annual session at the Court House in Burlington, on Wednesday and Thursday, June 19th and 20th, 1867. The President being absent, the Society was called to order by Dr. H. D. Holton, Vice President.

The Board of Councillors met at 9 o'clock, A.M., June 19th. Upon recommendation of the Board, Drs. C. C. Smith of Gaysville, John Knowlton of Castleton, A. W. Styles of Sudbury, Chas. W. Peck of Brandon, and Wm. H. Giddings of Bakersfield, were elected members. By invitation, the members of the Society visited the Medical College at 11, A.M.

In the afternoon, papers were read as follows:—On *Pyæmia*, with cases, by Dr. S. T. Brooks, of St. Johnsbury. On *Chronic Diarrhœa*, by Dr. E. H. Pettengill, of Saxton's River; also one on *Foreign Bodies in the Air-Passages*, by the same. On *Septicæmia*, or *Blood-poisoning*, by Prof. Crosby, of the University of Vermont. The thanks of the Society were tendered to Dr. Crosby, and a copy of his paper requested for publication in their Transactions.

An address was then delivered by the Vice President of the Society, Dr. H. D. Holton, introducing as topics for contemplation, *Medical Education*, under which head, he suggested among other things, the need of some title which should indicate the standing of a scientific and regular physician, that of M.D. being adopted by irregular practitioners. He passed to the subject of *Criminal Abortion*, alluding to the alarming prevalence of the crime, to its dangerous consequences and effect on population; contrasting the small families of our native population with the larger ones of former times, and mentioning a district school, in the last generation, to which three families sent *thirty* children at one time, with a good reserve at home. He went on to consider the subject of *Insanity in Women*. This is commonly consequent on uterine derangement. For these cases proper treatment is not commonly afforded by our hospitals for the insane. Excellent as they are, they are a step short of the demand. The risks of conducting proper examination, from the perverted imagination of the patient, were alluded to; and the propriety of having a board of consulting examiners for each hospital, to be called in at the discretion of the superintendent, was suggested. He hoped the Society would take action leading to the formation of such a board for the Vermont State Asylum.

An interesting discussion followed, during which Dr. Warner, of New Haven, President of the Society, entered the Hall and took the chair. Dr. Hyde, of Hardwick, thought the portion of the address relating to abortion should be circulated throughout Vermont. There is great ignorance on the subject of the danger and wrong of the practice. Every physician has such applications to him, nine tenths of them from married women. The profession has a duty in building up a wholesome public sentiment on the subject.

Dr. Fassett, of St. Albans, thought a committee should be appointed to memorialize the Legislature on the subject, especially for preventing the circulation of the advertisements of abortionists and their medicines in the newspapers.

Dr. Stiles thought that if the profession was kept within bounds it would help much towards the object in view. The idea that the world would be peopled faster if the proper ends of marriage were more generally regarded, was a very good one; but on looking around him, he noticed as few children among the medical profession as out of it. He thought in this matter "Charity should begin at home."

Dr. Warner said his absence hitherto had been owing to attendance on a dangerous case resulting from the practice in question. He was glad to find the subject under discussion. No woman ever came to him but once to procure abortion. He always endeavored to show them the danger and wrong of such interference with nature, and in some cases had threatened exposure if he should discover that they had applied to other parties for the same end.

The discussion was further continued by Drs. Perkins, Keith and Harding, in the same general line of remark.

Dr. Keith, one of the delegates appointed to attend the examination of the graduating class in the Medical Department of the University of Vermont, made a verbal report, reserving a written report for the annual meeting in October. The number of students in attendance during the lecture term was 80; the graduating class, 24. The examination was rigid, critical, thorough, and highly satisfactory to the delegates, evincing close study and investigation on the part of the class, and a determination on the part of the faculty of the College to insist upon thorough attainments, and a high standard for graduation. The young men acquitted themselves nobly, nine of them taking the highest mark, and all passing a good examination.

Prof. Perkins presented a set of instruments for uterine dilatation, consisting of three dilatable rubber bags of graduated sizes, to which he had added a smaller size. He explained their use in the case of retained placenta, flowing, &c.

Mr. Tinkham, agent for Perkins, Stern & Co., had permission to present before the Society samples of California wines for their inspection, which he claimed were the pure juice of the grape, and valuable for medicinal purposes. The samples were highly appreciated.

SECOND DAY.

Upon the assembling of the Society the second day, the following resolution was offered by Dr. Goldsmith, and unanimously adopted:—

Resolved, That while the State Medical Society does not desire to regulate the prices of professional labor in the State, it is nevertheless fit and becoming in us to fix a scale of fees which in our judgment will afford a rate of compensation reasonable and just to practitioner and patient.

Dr. Goldsmith then moved that, in the judgment of this Society, the following sums are a reasonable compensation for the services mentioned, as follows:—

For each visit within one mile, $1; for each mile of travel, 50 cts.; for first consultation (mileage extra), $5; for each subsequent consultation, $3; for midwifery, $10; for office consultation, $1; for written advice, $5; for examination of thorax, special, uterus or rectum, first time, $5; for each subsequent examination, $3; for vaccination, $2. The motion was agreed to.

Prof. J. Perkins read a paper presenting observations intended to be preliminary to a series of communications upon *Diseases of Females.*

Dr. L. C. Butler presented a paper on the *Decadence of the American Race as exhibited in the Registration Reports of Massachusetts and Vermont; Causes and Remedy.*

Dr. Butler's paper reviewed the discussion on criminal abortion, and subsequently the whole subject was referred to a committee, consisting of Drs. L. C. Butler, M. O. Porter, and H. D. Holton, who were instructed to memorialize the Legislature of the State in regard to further legislation upon the subject of criminal abortion, and also in regard to vicious publications in newspapers and pamphlets. The committee were also instructed to place before the public a proper expression of the sentiments of this Society upon the subject presented in the papers read by Drs. Holton and Butler.

Prof. Perkins was appointed a committee to present resolutions for the consideration of the Society, upon the same subject.

Dr. C. M. Rublee, of Montpelier, read a paper on *Cataract,* detailing the history of six cases in one family.

Dr. J. N. Stiles presented the following resolution, which was adopted:

Resolved, That the Society tender their thanks to Mr. O. M. Tinkham for the samples of California wines presented from Perkins, Stern & Co., and that the Society heartily commend them to the profession of the State as well worthy of their confidence and patronage.

The Board of Councillors recommended, as a subject for discussion at the annual meeting, "*The Medicinal Springs of Vermont,*" and appointed Dr. W. R. Hutchinson to read a paper on that subject. They also invited each member of the Society to present papers on any medical topic he may choose.

During the afternoon session Dr. F. W. Goodal, of Greensboro', presented specimens of mucous membranes which he regarded as coming from the bladder of a female patient under his care. Dr. Goodal gave a succinct history of the case.

Dr. Braley, of Chelsea, introduced the following resolution, which was adopted:

Resolved, That each member of the Board of Councillors be requested to furnish to the Secretary of this Society a complete census of the Physicians of his county.

Dr. Harding, of Grand Isle, read a paper on *the Topography and Diseases of Grand Isle County.*

[The closing proceedings of the second day's session will be given in our next issue.]

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

BOSTON: THURSDAY, JULY 11, 1867.

MIND LIMITED BY MATTER.

THE brain is the organ of the mind. It is the great water-wheel in virtue of which the thoughts revolve. It is easy to conceive that through the brain the mind may interfere with the ordinary functions of the body, and the body react upon the mind. But, the materialists go further, and declare that thought is solely a function of the cerebrum—that intellectual operations are not merely attended by, but consist in, a secretion of cells in the nerve tissue. This doctrine does not belong especially to the medical profession. Though now, as we have lately stated, popular in the Parisian Medical School, it is not an outgrowth of that body, but is impressed upon it from without, being at present fashionable in Parisian society, where, with other forms of infidelity, it antedates the revolution.

To assert materialism, and its handmaid fatalism, is, as Dr. Holmes says, a very different thing from the " attempt to show the *limitations* of the self-determining power as forced upon our observations as students of nature." In his remarks at the late festival of the Massachusetts Medical Society, Dr. Holmes in a few epigrammatic sentences strikes out generalizations which it would require volumes to illustrate. But we propose, in our small way and space, to speak of some of the limitations to which mind is subject in its union or marriage with the material world.

We need not look far for instances. To most of us, *practitioners of midwifery excepted*, an illustration comes every twenty-four hours. In the *sleep* of the body, shared by man with the brute creation, we see for a time abrogated—in abeyance—the will, the thoughts, and, happily for many, the sentiments. Pass to the waking state, and recollect the reactions of pregnancy on the female. In some the disposition seems, for the nonce, to be completely changed. She who was gentle, considerate, and patient with the faults of others, now becomes irritable, capricious, and needful of the utmost forbearance. Sometimes, ludicrously enough, the opposite change takes place, and she who was a shrew becomes a Sister of Charity. *Tartary* is replaced by Utopia. Again, the judgment is perverted. Despondency takes the place of hopefulness. Indeed, the *morale* is occasionally so far overturned that low propensities are developed. An irresistible inclination to theft breaks out in a person whose integrity, when she is in her normal condition, is above impeachment. And what is to the point, the subjects of these changes may be fully aware of them, lament them, and struggle powerless against them. In a word, the mind has been taken possession of by material influences—the *will* has been subjected to *matter*.

Perversion or impairment of the will is also very frequently witnessed in hysteria, a disease which is erroneously regarded by the uninformed as a pretence, or an affectation, when in fact the will is put forth only in that semi-mechanical way which we call emotional, as when the eyelid is closed upon the sudden approach of a solid body, or when screams are uttered at the bidding of pain. By applying a stronger emotion, as fear, we replace the hysterical convulsion or trance by more normal action; or, by acting upon the imagination, we may relieve the will from the pressure of the morbid emotion. Hysteria, as we know, most frequently occurs in females, and is often associated with uterine disorder; or else, the functions of the generative organs being normal, these would seem to be too much for a weak frame. In either case, the nervous system gets out of gear, and matter sways the mind.

We have instances of our leading fact, when the mind, through the brain and sympathetic system, feels the disorder of the stomach in dyspepsia, and the "disposition" becomes unamiable; when the mental vision is distorted in delirium; when insanity inflicts upon us its living bereavement of our friends. In many cases of insanity the scalpel shows structural lesion of the brain itself. The manifestations of the so-called "mind diseased" are awry, because the central organ by which it is brought into relation with the material world, has been deranged.

An incontrovertible instance of the action in question is afforded in the production of mental perversions by the introduction into the body of certain drugs, such as opium, haschisch, &c. Here, it would seem, there is no escape from the conclusion that the mind is *materially* affected.

"Everybody knows," says Dr. Holmes, "that there are families where the children are born straight-grained, and families where they are born cross-grained." If it be objected here that, for aught we know, these favorable or unfavorable characteristics may reside primarily in, and be transmitted from, the "subtle essence" itself, instead of in the "grosser part," the case is different when we ascend to the origin of differences of national character as embodied in races and transmitted through successive generations.

"It is easy to conceive," it is remarked by Dr. Foissac,* "how momentary and individual impressions may become constant and general. Suppose, what exists in fact, that there reigns in a given country *an atmospheric constitution capable of impressing upon the moral nature a certain tendency*, the inhabitants will be more or less affected by it; every habit of the moral nature, criminal or virtuous, fortifying itself by practice and example, will thenceforth take on an abnormal development. This disposition transmitted by heredity, and receiving, from the *constantly acting influence of the air*, continual nourishment, may become the moral type of a nation, and give a distinct physiognomy to the *national character*."

We see this exemplified in the short history of this country. The Northern and Southern States were peopled originally by the same race, though from different classes of society. The Puritans, a select band purified by persecution and self-sacrifice, though narrow in their ideas, transmitted indeed to their descendants in New England, and consecutively in the Western States, traditions, habits, manners and morals, different from those of the first settlers of the Southern States, whether we believe, with one party, that the latter were English cavaliers, or, with another party, that they were adventurers from a lower social stratum. But the essential point is that the American colonists—North and South—were of the same Anglo-Saxon stock. Apart, then, from the influence of differing institutions, traditionary or adopted, how distinct is the physiognomy of the two sections! The one cool, calculating, persistent even to obstinacy, slow to take up, equally slow to put down, and impressed with a restless energy that never allows inaction while there is anything that can be done; the other open, impassioned, impulsive, enthusiastic, yet averse to exertion, save when necessity compels it. Here we have the effect of opposite climates. The Northern is bracing and stimulating to a degree that is scarce wholesome, and which is at once manifest to new-comers. The Southern is enervating in the extreme, a few years' residence in it being sufficient to tone down the energy of the most active Northerner. In what particular way it is brought about that, like the inhabitants of other southern climes, its people are also passionate and impulsive, we will not stop to inquire, but will note here the general fact as bearing on the subject we are discussing.

The British Channel separates nations differing greatly in climate, and quite antagonistic in character. Yet the English people were, in times past, made up largely by migrations from Germany, subsequently intermingled with their conquerors from Normandy. And, to show how rapidly climatic transformations take place, the French etymology of their names is, so far as we are aware, the only mark by which the descendants of French refugees (Huguenots and others) can be distinguished, mentally or physically, from the veriest cockney.

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* "De l'Influence des Climats sur l'Homme et des Agents Physiques sur le Moral."

Now, from these and similar facts, some French materialists argue that since the mind is shown not to be completely independent of matter, therefore there is no such thing as "spirit" to be distinguished from material existence. This, as it seems to us, is entirely illogical. And, *per contra*, we hold that if independence of the *will*, even partial, can be shown, then materialism falls ignominiously to the ground. Thus, given an individual with low, materialistic propensities, implanted deeply in, and having strong hold of, his being, if, by his self-determining power, he overcome this lower nature, then in that case the independence of the will is fairly set up. It needs no extended knowledge of biography to produce such an instance. We are told of one who, though uncultured by Christian or even Jewish Revelation, had attained a purity, a gentleness, an integrity, a wisdom which would put to shame many a sincere Christian disciple. And yet, it is related, that "he was naturally of a licentious disposition, and a physiognomist observed, in looking in the face of the philosopher, that his heart was the most depraved, immodest and corrupted that ever was in the human breast." We have but to pronounce the name of Socrates, and materialism, by token of *self-mastery*, fades out of sight.

Take a different and more modern instance of one who, by sheer force of will, overcame the hindrances and trammels of a weak body, for purposes of merely political ambition. We cite the example of Cardinal Richelieu, who, as statesman, first moulding a weak king to his designs, reduced to subjection a powerful and factious nobility; while, on the other hand, he penetrated into the domestic affairs of a rival nation, and weakened its power by fomenting its intestine discords. He took advantage of circumstances, and bent them to his purpose of making his country powerful, and himself powerful with her. Such was Richelieu, not by reason of the *mens sana in corpore sano*, but through mastery (not the least of his victories) over a frail body, torn by pain and prostrated by disease, to the extent that he was carried on a litter to those august councils where he defied and triumphed over his enemies.

One more instance, nearer to us in time and space. Our admiring and grateful recollection brings to mind one who, with the hot blood of the South coursing in his veins, impulsive and impassioned, curbed his fiery temperament, till by a steady, persevering resistance, at which many of his Northern associates grew restive, he wore out the protracted efforts of a powerful empire to subdue a band of feeble colonies. At the same time, he resisted the pressure of public opinion among his countrymen, urging him to risk the fortunes of battle, and through much obloquy calmly held to that temporizing policy which won us ultimate victory and made us a nation. We look at the portrait of his later years and see *self-mastery* written out from within on every line of his countenance.

All history is filled with such illustrations of the triumph of the human will over animal propensities, physical weakness, and climatic temperament. Greatness in statesmanship and generalship, eminence in science or art, have, we take it, never been attained without similar victories—temporary or permanent—of the self-determining power over the lower or animal nature. Nay, ordinary success is obtained only in the same way. And, not to overstate the point, these phenomena are so contrasted with those of the ordinary functions of matter that we are forced to seek their origin in a different source from the "corporeal part."

Our position, however, has a still firmer foundation. We believe upon evidence; we are convinced by reasoning; but, we *know* only through *consciousness*. Now, we are conscious that, with certain limitations, we exert free will. And, it is too great a strain upon *common sense* to suppose that free will has anything in common with the properties or functions of matter.

We are well aware that we have but touched the threshold of this subject, but to go further would be to invade the province of the theologian.

MESSRS. EDITORS,—I noticed in the last issue of the Journal a letter from Dr. Arnold, in relation to the resolutions adopted by Dr. H. R. Storer's class, claiming that his name was appended without his authority, which is calculated to convey a wrong impression. As chairman of the committee who drafted the resolutions, and ordered them printed, it becomes my duty to explain how the mistake occurred.

I wish it to be distinctly understood that the fault, so far as any exists, is wholly mine, and that Dr. Storer knew nothing whatever of the matter.

Dr. Arnold, in his letter, would give the impression that he could not endorse the sentiments expressed in the resolutions; and persons unacquainted with the peculiarities of the gentleman might even doubt his having attended the lectures.

In relation to these points, I can state that Dr. Arnold was a member of Dr. Storer's class, and was apparently as enthusiastic as any of us; and further, that he expressed sentiments to me during the last half of the course, which were substantially the same as those contained in the resolutions referred to. He acquiesced entirely in my expressed opinion, that, at the close of the course, we ought to present Dr. Storer with a set of resolutions expressing our high appreciation of his lectures. It was on the strength of this, added to the belief of the class that the Doctor would feel slighted, and justly so, at being the only one whose name did not appear in connection with the resolutions, that I, by the advice of the others, Dr. Arnold being the only member of the class not present, affixed his name to the copies intended for the press. It was understood that one of our number, who was going to remain in Boston, should obtain Dr. Arnold's signature to the original paper, which he was instructed to present to Dr. Storer immediately thereafter; and in case Dr. Arnold should object, for any reason, to signing the paper, he was requested to notify the press of the fact before its publication. This duty, through press of business, or from some other cause to me unknown, has evidently not been performed. I doubt not that the Doctor has some good reason for his procrastination.

In conclusion, I beg Dr. Arnold's pardon for being guilty of supposing that the sentiments which he expressed to me were genuine. For his peace of mind, I would assure him that his name does not appear on the original paper, and that he wll be saved the trouble of either placing it there, or refusing to do so; for, by virtue of the power given me by the class, I shall request the gentleman, to whose care the paper was entrusted, to present it to Dr. Storer as it at present exists, bearing the signatures of nine men who are not afraid to express their honest opinions publicly, even though they may be widely different from those of the profession at large. Respectfully, CHAS. M. CARLETON.

Norwich, July 1, 1867.

Death of M. Trousseau.—A heavy bereavement afflicts the medical brotherhood. TROUSSEAU died Sunday, the 23d of June, after several months of cruel suffering.—*Union Médicale.*

VITAL STATISTICS OF BOSTON.

FOR THE WEEK ENDING SATURDAY, JULY 6th, 1867.

DEATHS.

	Males.	*Females.*	*Total.*
Deaths during the week	28	36	64
Ave. mortality of corresponding weeks for ten years, 1856—1866	35.6	34.6	70.2
Average corrected to increased population	00	00	78.16
Deaths of persons above 90	0	0	0

DEATHS IN BOSTON for the week ending Saturday noon, July 6th, 64. Males, 28—Females, 36. Accident, 1—apoplexy, 1—disease of the brain, 2—burns, 1—cancer, 1—cholera infantum, 3—cholera morbus, 1—consumption, 9—convulsions, 2—debility, 3—diarrhœa, 1—dropsy of the brain, 1—drowned, 1—exhaustion, 1—scarlet fever, 7—typhoid fever, 2—gastritis, 1—hæmorrhage, 1—disease of the heart, 2—homicide, 2—insanity, 1—disease of the liver, 1—inflammation of the lungs, 1—marasmus, 1—measles, 2—paralysis, 2—pericarditis, 1—premature birth, 1—puerperal disease, 1—purpura, 1—smallpox, 4—unknown, 3—whooping cough, 2.

Under 5 years of age, 28—between 5 and 20 years, 6—between 20 and 40 years, 19—between 40 and 60 years, 6—above 60 years, 5. Born in the United States, 46—Ireland, 15—other places, 3.